1. What is a Gene?
2. A gene is the basic physical and functional unit of heredity. Genes are made up of DNA. In humans, genes vary in size from a few hundred DNA bases to more than 2 million bases. It is estimated that humans have between 20,000 to 25,000 genes.

Every person has two copies of each gene, one inherited from each parent. Most genes are the same in all people, but a small number of genes (less than 1 percent of the total) are slightly different between people.

Alleles are forms of the same gene with small differences in their sequence of DNA bases. These small differences contribute to each person’s unique physical features.

1. What is gene expression?
2. Gene expression is the process by which the instructions in our DNA are converted into a functional product, such as a protein.
3. What is mRNA?
4. mRNA or messenger RNA carries complementary genetic code copied during transcription, in form of triplets of nucleotides called codons. Each codon specifies a particular amino acid, though one amino acid may be coded for by many different codons. Although there are 64 possible codons or triplet bases in the genetic code, only 20 of them represent amino acids.
5. What is DNA sequencing?
6. It is a technique used to represent the sequence of nucleotides of DNA. The nucleotide sequence is the most fundamental level of a gene or genome.
7. What are the applications of DNA sequencing?
8. It can be used to find genes, segments of DNA that code to a specific protein or phenotype.
9. The DNA sequences of different species are compared in order to plot the evolutionary relationships both within and between the species.
10. A gene sequence can be screened for functional regions. In order to determine the function of a gene, various domains are identified that are common to proteins of similar functions.